

SONY®

Video Cassette Recorder

EVO-9800P

Operating Instructions page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.

3012446

Mode d'emploi page 36

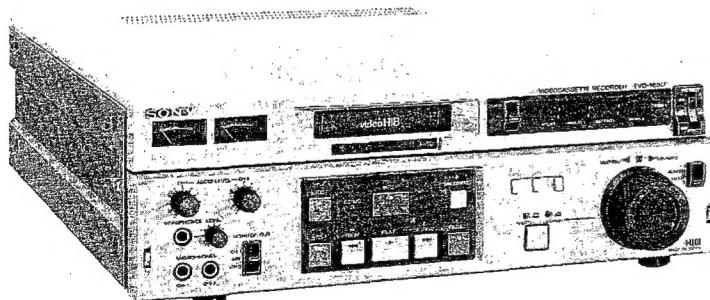
Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

Bedienungsanleitung Seite 70

Vor der Inbetriebnahme lesen Sie diese Anleitung sorgfältig durch und bewahren Sie sie zum späteren Nachschlagen auf.

Istruzioni per l'uso pagina 104

Prima di usare l'apparecchio, leggete con attenzione questo manuale e conservatelo per riferimenti futuri.



Hi 8

© 1990 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Caution

Television programmes, films, video tapes and other materials may be copyrighted.
Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

WARNING FOR THE CUSTOMERS IN THE UNITED KINGDOM

THIS APPARATUS MUST BE EARTHED to your 3-pin plug in accordance with following instructions.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth (safety earth)

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \pm or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

NOTE

This appliance conforms with ECC Directive 87/308/EEC regarding interference suppression.

ADVARSEL!

Lithiumbatteri-Eksplorationsfare
Udskiftning må kun foretages af en sagkyndig,
og som beskrevet i servicemanualen.

LITIUMBATTERI

BÖR ENDAST BYTAS AV SERVICEPERSONAL.
EXPLOSIONSFARA VID FELAKTIG HANTERING.

LITHIUM BATTERY

SHOULD ONLY BE CHANGED BY TECHNICAL PERSONNEL.

THERE IS A RISK OF EXPLOSION IF HANDLED IMPROPERLY.

Table of Contents

General	4
Precautions	5
Hi8 Video System	6
Location and function of parts and controls	8
Front panel	8
Sub-panel	12
Rear panel	14
On video cassettes	16
Connections	17
Basic connections	17
Connections of headphones and microphones	18
Preparation	19
Recording	21
Playback	22
Operation	22
Search operation	23
Recording and playback of the 8mm time code	24
Editing	25
Rack mounting	26
Dial menu operation	27
Operation	28
Contents	30
Specifications	33
Troubleshooting	34
Video head cleaning	35
Video head replacement	35

General

High-quality picture in Hi8 video system

Thanks to the Hi8 video system, picture quality of 8mm video system is extremely improved. A metal tape with large magnetic energy allows high-density recording, and makes it possible to record and play back a high-quality picture.

Automatic editing system

Using the EVO-9800P, an automatic editing system can be composed together with an RM-450CE editing control unit and a VO-9850P U-matic VTR. The EVO-9800P functions as a player in this system, which allows high-quality and precise editing of the program recorded with a compact and light-weight 8 mm camcorder.

Chroma noise reducer

Thanks to a digital chroma noise reducer, a life-like color reproduction will be possible. The chroma noise reducer can also eliminate the jitter so that a stable playback picture can be obtained.

Hi-Fi sound with the AFM and PCM recording

A monaural AFM recording and two-channel PCM recording with wide dynamic range can be simultaneously executed. Cannon XLR 3-pin connectors usually used for professional audio equipment are employed for the audio inputs and outputs.

Recording and playback of the 8 mm time code

The 8mm time code can be recorded on a tape on which video and audio signals have been recorded. The 8 mm time code being played back is transferred to the RS-422A serial interface time code data, and output from the REMOTE 1 (9P) connector. Using this time code data, precise editing will be possible.

Search operation

A search dial with the shuttle and jog functions is furnished. In shuttle mode, playback pictures can be viewed at various speed from 1/30 times to 15 times normal speed in forward direction, or from 1/30 times to 13 times normal speed in reverse direction as well as in a still mode. In jog mode, playback pictures from still to ± 1 time normal speed can be viewed.

As the playback can be performed in both forward and reverse directions, any desired scene can be easily found.

LED time counter

The time counter indicates the tape running time and the 8 mm time code in hours, minutes, seconds and frames by the LEDs. These are useful to check the recording time of a material and the current tape position.

Remote control

The unit is equipped with a 9-pin remote control connector. When the equipment which has a 9-pin remote connector such as an RM-450CE editing control unit, is connected here, the EVO-9800P can be remotely controlled with this unit.

When a BKU-703A* 33-pin editing interface (optional) is installed in the EVO-9800P, it can be remotely controlled by the equipment with a 33-pin remote connector such as an RM-440.

Dial menu operation

With the search dial, you can change the setting values for the 8 mm time code and others.

Dubbing connectors

A connector for duplicating video signals for a U-matic VTR is furnished.

S-VIDEO input and output connectors

The separated Y (luminance) and C (chrominance) signals can be fed to and from the EVO-9800P through the S-VIDEO input and output connectors, which results in high quality pictures.

* For the installation of the BKU-703A, consult your Sony dealer.

Precautions

On safety

- Operate the unit only with a power source specified in the "Specifications" on page 33.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near a heat source such as a radiator or an air duct, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Never operate the unit in a vertical position.
- Keep the unit away from equipment with strong magnets as for example a large loudspeaker.

On operation

- When the unit is not in use, turn the power off.
- Remove and store video cassettes after recording or playback.
- Never operate the unit right after having transported it from a cold location directly to a warm location.

On cleaning

Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which might damage the finish.

On transportation

- Remove the video cassette when transporting the unit.
- Save the original carton and associated packing material. They will be useful should you have to transport or ship the unit.

If you have any questions about this unit, contact your Sony dealer.

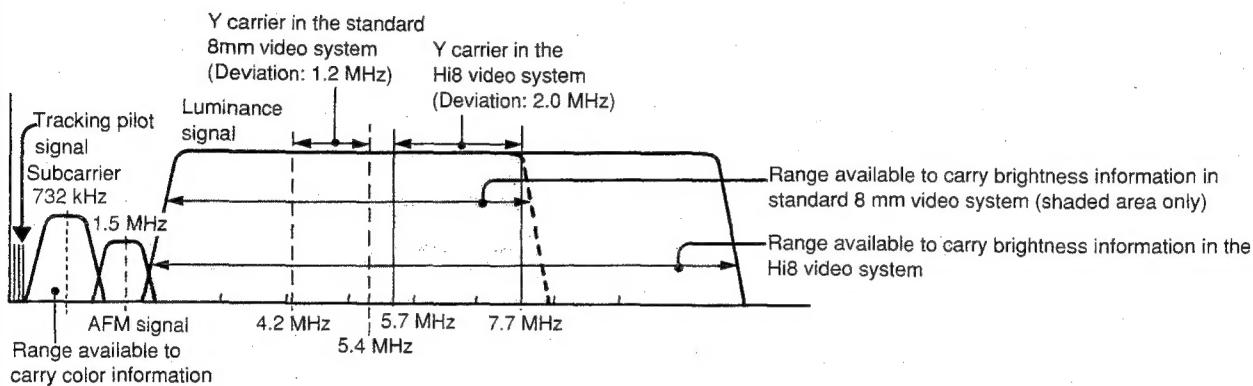
Hi8 Video System

In the Hi8 video system that is a new 8mm video system, Y (luminance) carrier frequency which carries information on brightness is shifted up 1.5 MHz, and the Y carrier deviation is changed to 2.0 MHz while the conventional deviation is 1.2 MHz. As a result, a wider bandwidth can be used for recording and playback (see below), and a higher quality picture with horizontal resolution of 400 lines or more can be obtained.

To take full advantage of the Hi8 video system, a Hi8 tape is prepared using a metal tape which has characteristics superior to a conventional tape.

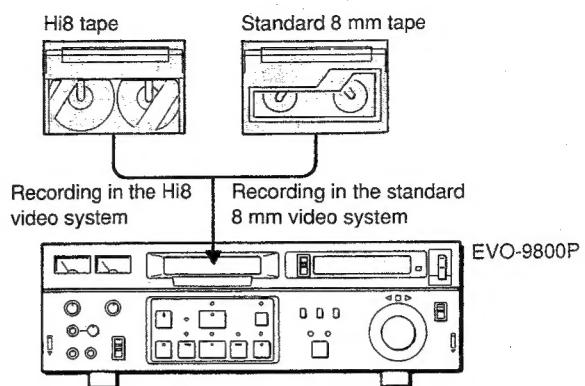
Recording in the Hi8 video system and conventional 8mm video system

The chroma subcarrier frequency which carries information on colors is kept unchanged at 732 kHz. The frequency of the Y carrier is shifted up 1.5 MHz, and the deviation is widened to 2.0 MHz.

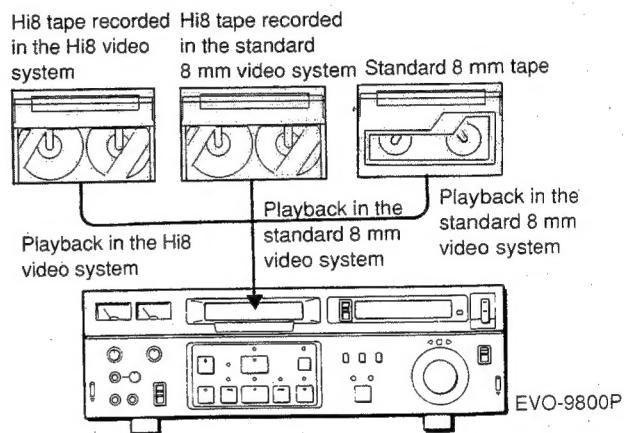


Cassette tape being used and automatic switching of recording/playback mode

When using a Hi8 cassette tape for recording, the VTR senses the detection holes on the cassette shell (see below), and automatically performs the recording in the SP (standard play) mode of Hi8 video system. When using a standard 8 mm tape, the recording is performed in the standard 8 mm video system.



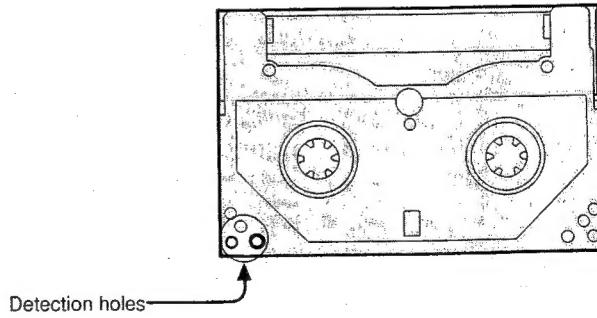
In playback, the VTR can detect the system mode used in recording by verifying the recorded signal, and plays back the tape in the appropriate mode.



- The Hi8 indicator on the front panel lights when a tape recorded in the Hi8 video system is played back.

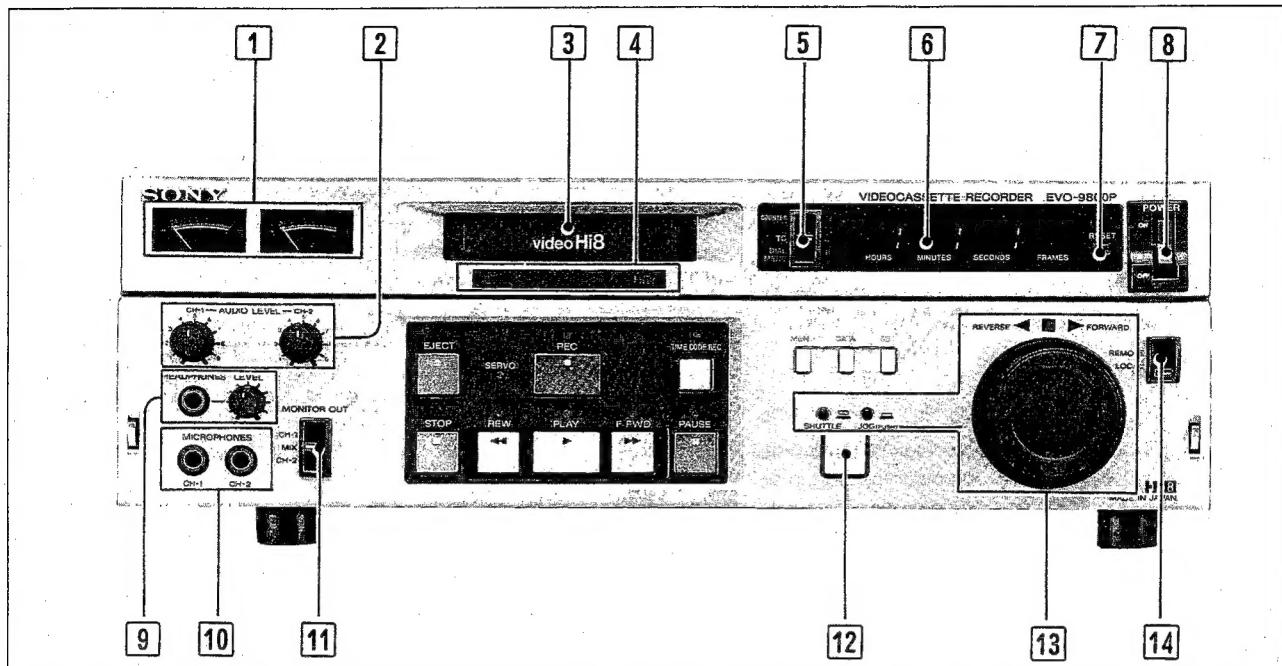
Hi8 cassette tape

This new Hi8 tape with high durability was specially developed for Hi8 video system recording/playback and features characteristics best suiting the Hi8 video system. Hi8 cassettes have a detection hole on the bottom of the cassette shell to automatically set Hi8 VTRs in the Hi8 video system recording.



Location and Function of Parts and Controls

Front Panel



[1] Audio level meters

Audio recording level is shown in recording, and audio playback level in playback.

[2] AUDIO LEVEL controls

[3] Cassette compartment

[4] Indicator section

	Lights when a cassette is in the cassette compartment.
AUTO OFF	Lights at power-on when moisture is condensed inside the unit. While this indicator is lit, a cassette cannot be loaded.
STANDBY	Lights while a tape is being threaded from or unthreaded to the cassette inside the unit.
TC	Lights when 8 mm time code is being recorded, or when the tape on which 8 mm time code is recorded is played back.
PCM	Lights when PCM sound is recorded on the tape or during PCM audio recording.
SP*	Lights when the tape speed is in SP (standard play) mode.
Hi8*	Lights when the tape is recorded in the Hi8 video system.

* The SP and Hi8 indicators will light when the power is turned on, and when a tape not recorded in SP or Hi8 mode is inserted, the corresponding indicator will go out.

[5] COUNTER/TC/DIAL MENU selector

Selects what is displayed in the time counter display [6] as follows.

COUNTER	Displays time period of tape travel in hours, minutes, seconds and frames.
TC	Displays 8 mm time code.
DIAL MENU	The unit goes into the dial menu operation mode and the dial menu will be displayed. In this mode, any other functions are deactivated.

Note

You can put the EVO-9800P in the dial menu operation mode with the REMOTE/LOCAL selector [14] set to LOCAL, only when a cassette is not inserted or when the unit is in the stop mode.

[6] Time counter display

Displays the item selected by the COUNTER/TC/DIAL MENU selector [5].

[7] RESET button

When the COUNTER/TC/DIAL MENU selector [5] is set to the COUNTER position and the time counter display [6] shows the time period of the tape travel, press to reset the time counter to 0:00:00:00.

[8] POWER switch

[9] HEADPHONES connector (stereo phone jack), HEADPHONES LEVEL control

[10] MICROPHONES CH-1 and CH-2 connectors (phone jacks)

[11] MONITOR OUT switch

Select the sound to be monitored through headphones or a speaker of a video monitor. The sound selected by the OUTPUT SELECT switch on the subpanel is selected as follows:

CH-1	To hear the channel-1 sound only
MIX	To hear the sounds both on channels 1 and 2*
CH-2	To hear the channel-2 sound only

- * When stereo headphones are used, the sound of channel 1 will be heard from the left unit and the sound of channel 2 from the right unit. When a monitor speaker connected to the MONITOR AUDIO or TV connector is used, mixing sound of both channels 1 and 2 will be heard.

[12] Search button

Press to put the unit in the search mode, and the search operation with the search dial in jog or shuttle mode will be possible.

If the setting of the dial menu number 209 is changed, the unit enters the search mode without pressing the search button.

See "Dial Menu Operation" for details.

[13] Search dial and SHUTTLE/JOG lamps

Functions as a search dial for quickly locating edit points or as a selector for the dial menu operation according to the setting of the COUNTER/TC/DIAL MENU selector [5].

Setting	Function
COUNTER or TC	Search for a scene.
DIAL MENU	Dial menu operation.

The details of the function are as follows:

Search for edit points

Set the COUNTER/TC/DIAL MENU selector [5] to COUNTER or TC, and press the search button [12]. The search dial can make the tape run in jog or shuttle mode. Push in to change from the shuttle mode to the jog mode and push it in again to change back. The corresponding lamp lights to show the current mode. Rotate the dial clockwise to run the tape forward (the ▶ FORWARD lamp lights), and counterclockwise to run the tape in reverse (the REVERSE ◀ lamp lights). When the tape stops, the ■ lamp lights.

SHUTTLE	Set the dial to one of 16 positions to run the tape at a speed from 1/30 to 15 times normal speed in forward direction, and from 1/30 to 13 times normal speed in reverse direction. A still picture is obtained at the center detent position.
JOG	The dial turns freely. The tape runs at a speed from 0 to 1 times normal speed while the dial is rotated. When the dial is stopped, a still picture is obtained.

Note

When playback at slow speed less than 1/2 time normal speed continues for about 30 seconds in shuttle or jog mode, the playback automatically stops.

Dial menu operation

Set the COUNTER/TC/DIAL MENU selector to DIAL MENU. Rotate the dial while pressing the MENU button [24] or the DATA button [25] to set characters or numbers on the display.

See "Dial Menu Operation" for details.

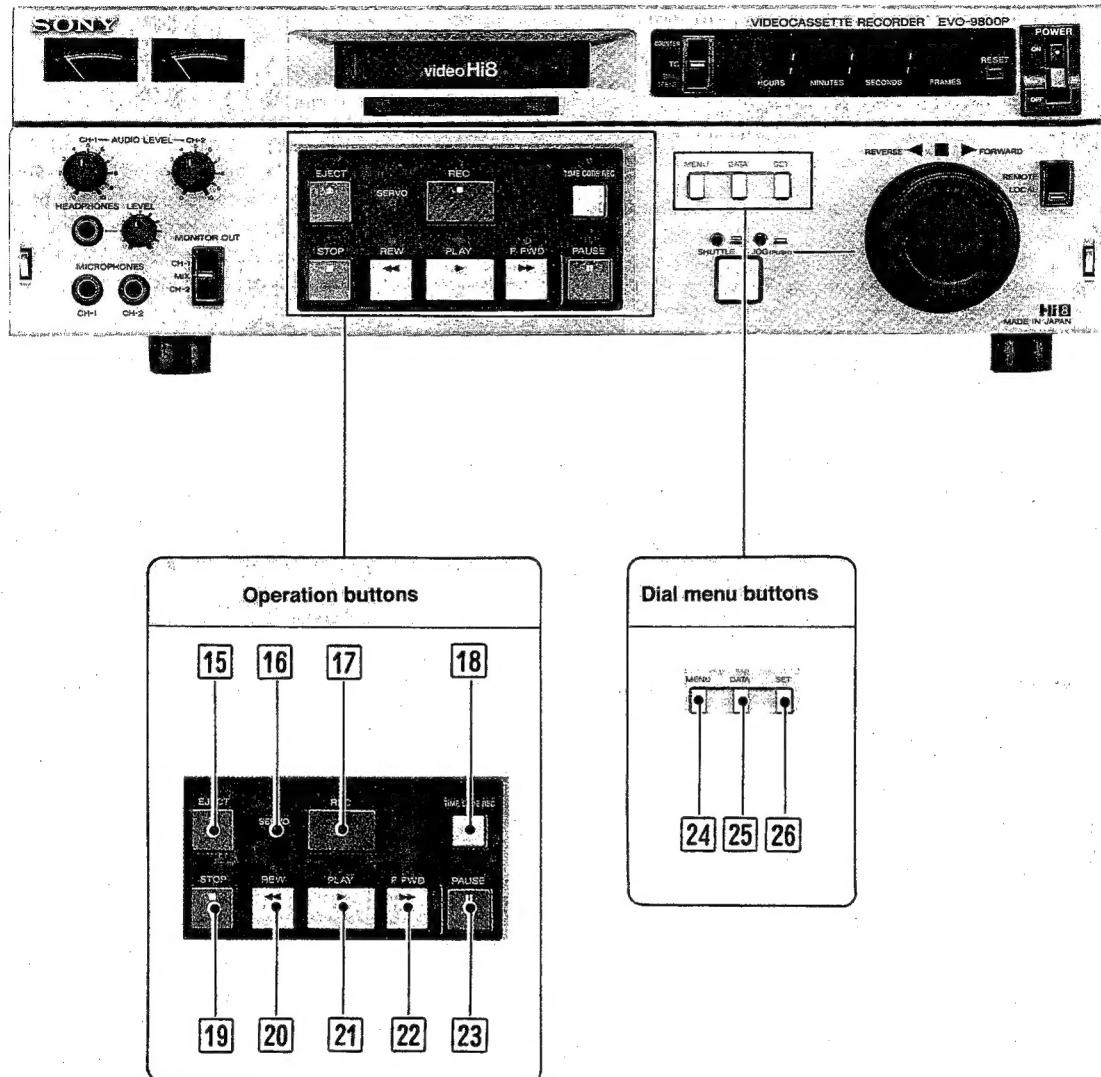
[14] REMOTE/LOCAL selector

Use this selector to control this unit with other equipment connected to the REMOTE 1(9P) connector on the rear panel.

The functions are controlled as follows:

REMOTE	Set to this position when you want this unit to be controlled by the unit connected to the REMOTE 1 (9P) connector (9-pin). With this selector set to REMOTE, none of the operation buttons for tape travel, except for the STOP and EJECT buttons, will function.
LOCAL	Set to this position to operate this unit alone.

Location and Function of Parts and Controls (continued)



Operation buttons

[15] EJECT ▲ button

Press to eject the video cassette.

[16] SERVO lamp

With the PLAY ► button pressed, normally the drum and capstan servo-mechanisms will start working properly. This lamp lights when the servo-mechanisms are locked in a reference signal.

Note

The SERVO lamp blinks if the servo-mechanisms are not locked in during editing.

[17] REC ● (record) button and indicator

For recording, press this button simultaneously with the PLAY ► button.

[18] TIME CODE REC button

For recording the 8 mm time code, press this button simultaneously with the PLAY ► button.

Note

While the 8 mm time code is recorded, lower part of the picture on the monitor is blanked by a black bar.

[19] STOP ■ button

Press to stop the operation of the unit. The E-to-E mode picture can be seen on the monitor screen.

[20] REW ◀◀ (rewind) button and lamp

Press to rewind the tape. The E-to-E mode picture can be seen on the monitor screen.

[21] PLAY ► button and lamp

Press to play the tape back. Simultaneously pressing this button with the REC ● button sets the unit in the record mode; simultaneously pressing it with the TIME CODE REC button sets the unit in the 8 mm time code recorded mode.

[22] F FWD ►► (fast forward) button and lamp

Press to advance the tape rapidly. The E-to-E mode picture can be seen on the monitor screen.

Note

When the tape runs by pressing the F FWD or REW button with the COUNTER/TC/DIAL MENU selector set to COUNTER, the counter indication and actual tape position may not correctly match.

E-to-E (Electric-to-Electric) mode

An input video signal which has passed through the amplifier in the recorder, is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.

The unit automatically enters the E-to-E mode when it is set in the stop, F FWD or REW mode.

[23] PAUSE II button and lamp

Press to stop the tape momentarily. To start the tape, press again. When this button is pressed during playback, a still picture will be obtained. If the PLAY ►, F FWD ►►, REW ◀◀ or search button is pressed during the pause mode, the pause mode will be released and the tape will run in the mode designated by the button pressed.

Dial menu buttons

The dial menu buttons [24], [25] and [26] are used only when the COUNTER/TC/DIAL MENU selector [5] is set to DIAL MENU.

[24] MENU button

While pressing this button, turn the search dial [13] in jog mode to select the menu.

[25] DATA button

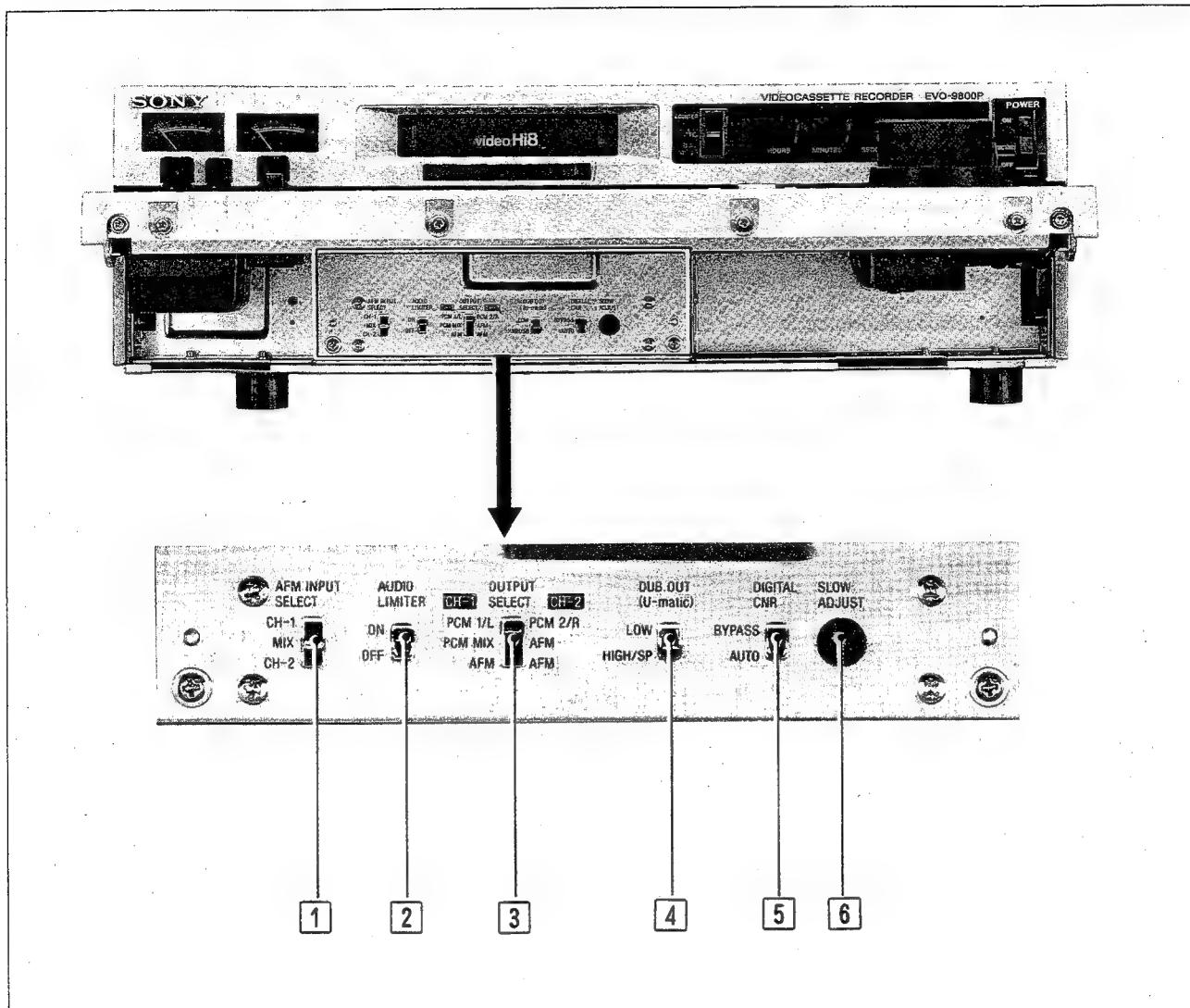
While pressing this button, turn the search dial [13] in jog mode to set the data.

[26] SET button

Press this button to settle the data set by the DATA button [25].

Location and Function of Parts and Controls (continued)

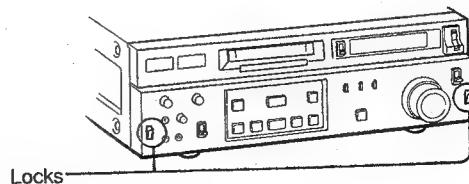
Sub-panel



Opening and positioning the control panel

To change the setting of the switches on the sub-panel inside the control panel, open the control panel as illustrated. The control panel can be tilted upwards by 30°, 60° or 90° for convenience.

- 1 Push down the locks on the both sides simultaneously so that the lower half of the front panel comes to the front.
- 2 Tilt the panel up and lock it at the desired angle of 30°, 60° or 90°. Be sure to check that both sides are locked firmly.



1 AFM INPUT SELECT switch
Selects the sound for AFM recording.

CH-1	To record the sound connected to the AUDIO LINE IN CH-1/L connector.
MIX	To record the mixed sound connected to the AUDIO LINE IN CH-1/L and CH-2/R connectors.
CH-2	To record the sound connected to the AUDIO LINE IN CH-2/R connector.

2 AUDIO LIMITER switch

ON	The audio recording limiter circuit is activated to minimize sudden surges of input signals and perform recording with low sound distortion. For microphone recording, use this setting.
OFF	The limiter circuit is deactivated, enabling a manual recording level adjustment.

3 OUTPUT SELECT switch

Selects the sound output from the AUDIO LINE OUT CH-1/L and CH-2/R connectors.

Setting		Output	
CH-1	CH-2	CH-1/L connector	CH-2/R connector
PCM 1/L	PCM 2/R	The sound recorded on the PCM channel 1	The sound recorded on the PCM channel 2
PCM MIX	AFM	The mixed sound recorded on the PCM channels 1 and 2	The sound recorded in AFM
AFM	AFM	The sound recorded in AFM	

4 DUB OUT (U-matic) selector

Sets according to the recording type of the U-matic recorder connected to the DUB OUT (U-matic) connector.

LOW	When a U-matic VTR for recording in low-band mode is connected.
HIGH/SP	When a U-matic VTR for recording in high-band mode or an SP system U-matic VTR is connected.

5 DIGITAL C.N.R. (Chroma Noise Reducer) switch

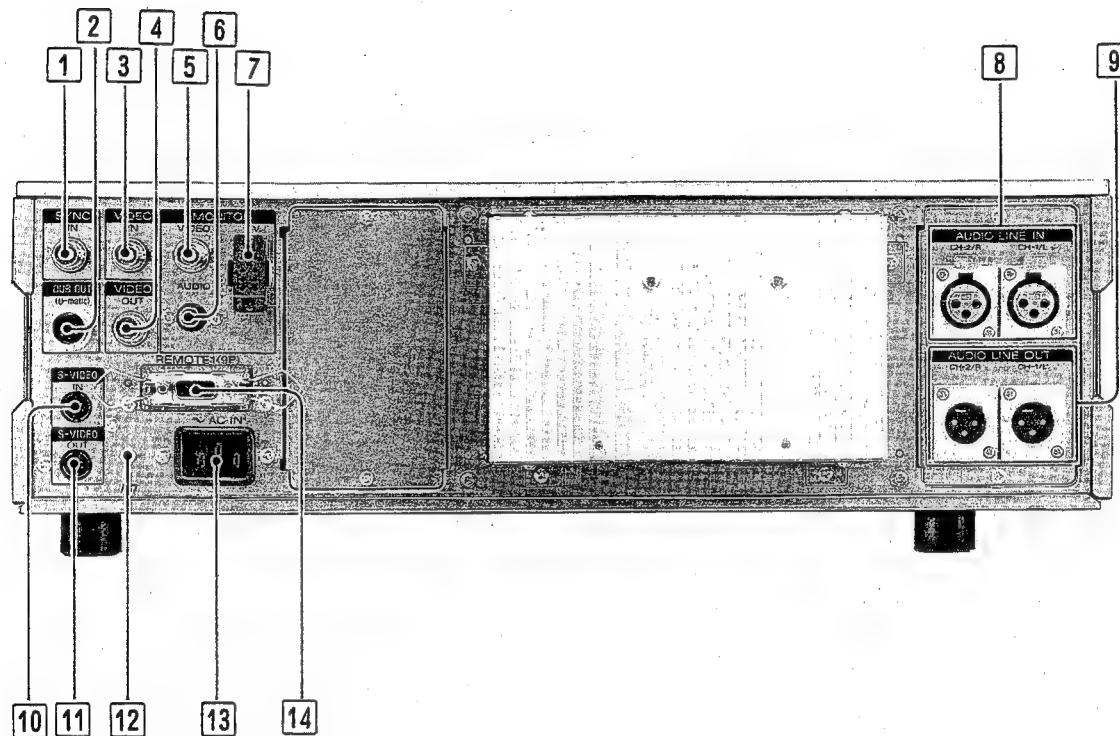
BYPASS	The video signal bypasses the built-in digital noise reducer.
AUTO	During playback, the video signal automatically passes the chroma noise reducer. Normally use this setting.

6 SLOW ADJUST (slow-motion picture adjustment) control

Normally keep this control at the center click position. If streaks or snow appear during slow-motion playback, turn this control so that the best possible picture is obtained.

Location and Function of Parts and Controls (continued)

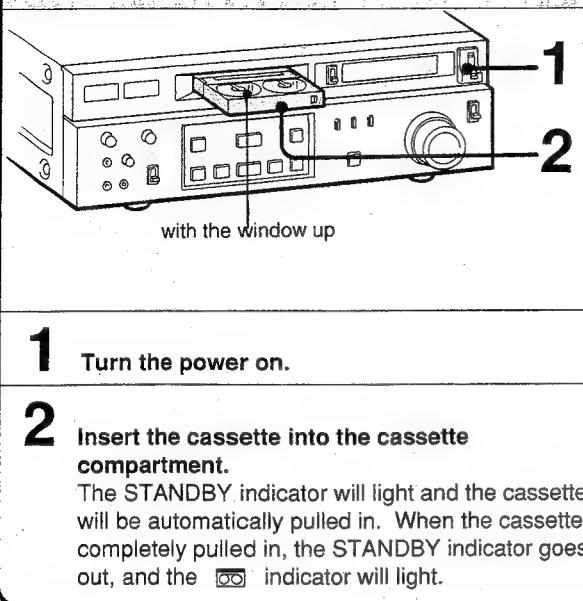
Rear Panel



- [1] SYNC IN (sync signal input) connector (BNC type)**
Accepts an external reference video signal to operate the unit in synchronization with an external device.
- [2] DUB OUT U-matic (dubbing output for U-matic VTR) connector (7-pin)**
Use to supply the video signal to be dubbed to a U-matic VTR. Connect to the dub input connector of the U-matic VTR using the 7-pin dubbing cable (optional).
(Be sure to set the DIGITAL C.N.R. switch to AUTO.)
- [3] VIDEO IN (video input) connector (BNC type)**
Supply a composite video signal to this connector.
- [4] VIDEO OUT connector (BNC type)**
Supplies a composite video signal.
- [5] MONITOR VIDEO connector (BNC type)**
This outputs the video signal for monitoring. Connect to the video input connector of a color monitor. Information superimposed on a picture in the dial menu operation mode will also be output.
- [6] MONITOR AUDIO connector (phono jack)**
Supplies an audio signal selected by the MONITOR OUT switch on the front panel.
- [7] MONITOR TV connector (8-pin connector)**
Accepts a video monitor having an 8-pin VTR connector. Both the MONITOR VIDEO, and MONITOR AUDIO connections can be replaced with a single cable connection here. In playback, the channel selected by the MONITOR OUT switch will be heard through the speaker on the video monitor.
 - The data of the dial menu is superimposed on the video signal and output.
- [8] AUDIO LINE IN CH-1/L and CH-2/R connectors (XLR 3-pin, female)**
- [9] AUDIO LINE OUT CH-1/L and CH-2/R connectors (XLR 3-pin, male)**
- [10] S-VIDEO IN connector (4-pin)**
Supply an S-VIDEO signal to this connector. When the 4-pin connector is inserted here, the signal supplied to this connector has priority over the signal connected to the VIDEO IN connector (BNC type).
- [11] S-VIDEO OUT connector (4-pin)**
Supplies an S-VIDEO signal.
- [12] Ground terminal**
- [13] AC IN (power inlet)**
Plug in the supplied AC power cord to supply power to the EVO-9800P.
- [14] REMOTE 1 (9P) connector (9-pin)**
Connect a Sony editing control unit such as an RM-450CE to perform editing.
Use the 9-pin remote control cable (optional) to make the connection.

On Video Cassettes

To insert a cassette

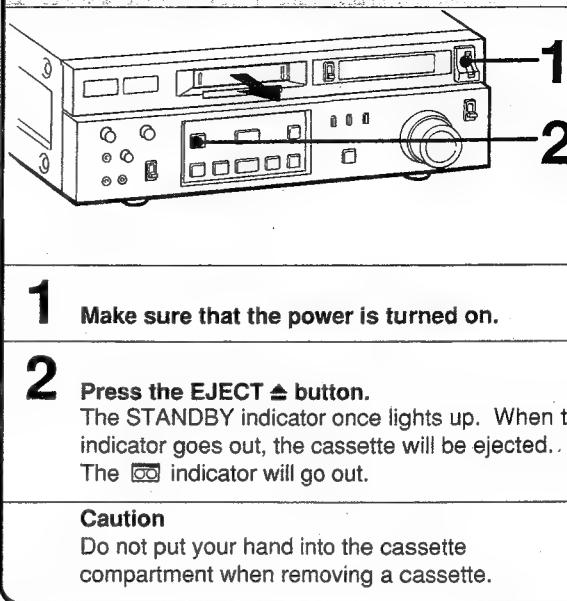


1 Turn the power on.

2 Insert the cassette into the cassette compartment.

The STANDBY indicator will light and the cassette will be automatically pulled in. When the cassette is completely pulled in, the STANDBY indicator goes out, and the indicator will light.

To remove the cassette



Notes on cassette insertion

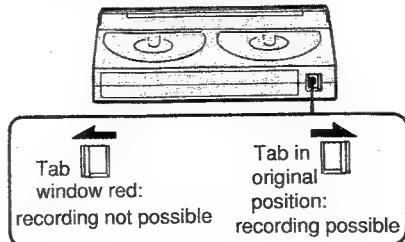
- Be sure to insert the cassette straight into the entrance of the compartment.
- Check the cassette sides and be sure to insert the cassette correctly with the window up.
- The labels on the cassette should be firmly attached. If they peel off an inserted cassette, you might not be able to remove the cassette.

If the STANDBY lamp remains lit after inserting cassette

- Turn the POWER switch off and then turn it on again.
- If the STANDBY lamp still remains lit, eject the inserted cassette. If the cassette cannot be ejected or if the STANDBY lamp still remains lit after the cassette is ejected, then consult your nearest Sony service facility.

Record prevent tab

When re-recording on a recorded tape, the pre-recorded material will be erased. If you want to safeguard the material recorded on a tape, slide the tab on the rear of the cassette to the left, so that the tab window is red. Then the tape cannot be recorded even if the REC button is pressed. When recording, check that the tab is set in the original position. If a cassette with the tab moved is inserted, an E-to-E mode picture (see page 11) appears on the monitor screen; however, the unit does not enter the recording mode.

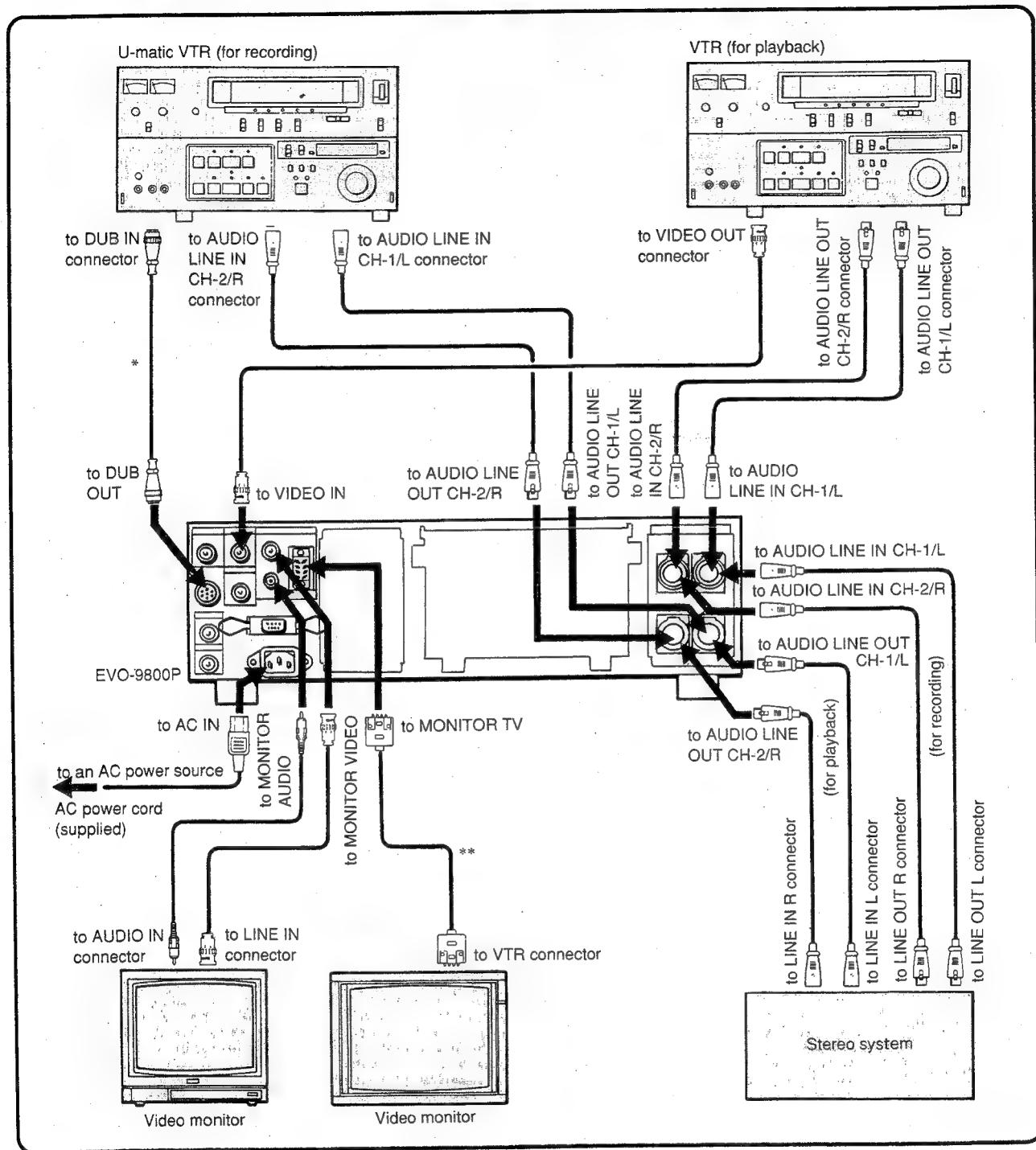


Handling and storage of cassettes

- Do not store a cassette in a place subject to direct sunlight, high humidity or excessive dust, or near heat sources, air ducts or magnetic field.
- After use, rewind the tape evenly on the supply reel to avoid damaging the tape.
- Store the cassette in a case and keep it in a vertical position.
- Do not fall the cassette and avoid subjecting it to mechanical shock.
- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness of tape, or if the tab is out or in, etc.

Connections

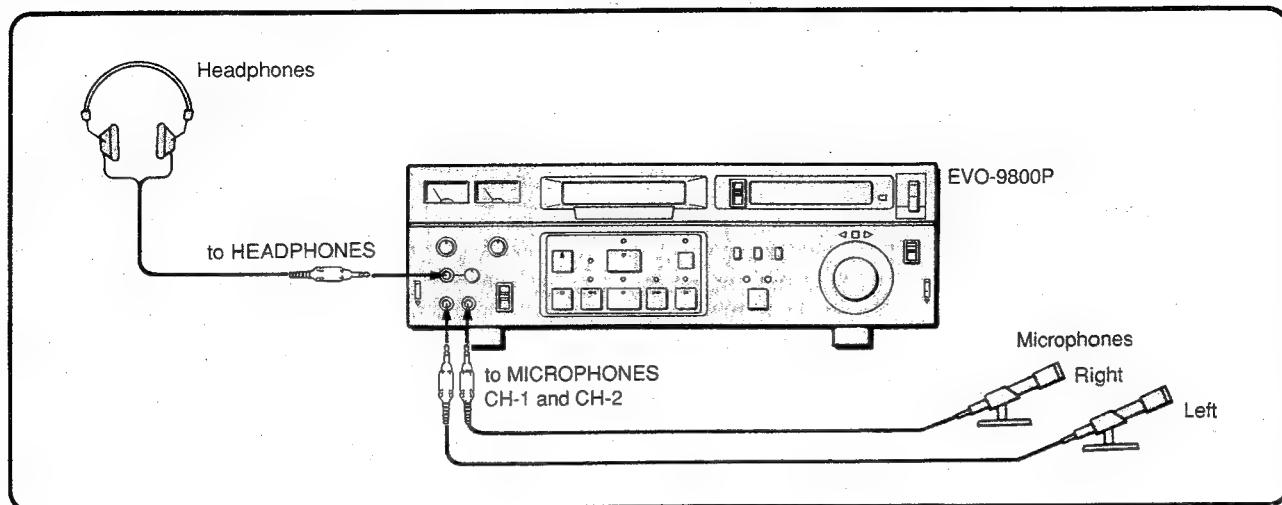
Basic Connections



* Dubbing cable VDC-5A. When the VTR is not equipped with the DUB connector, use the VIDEO OUT connector on the EVO-9800P for connecting a video output signal using a cable with BNC connectors.

** Use a VMC-3P, VMC-5P or VMC-10P monitor connecting cable.

Connections of Headphones and Microphones

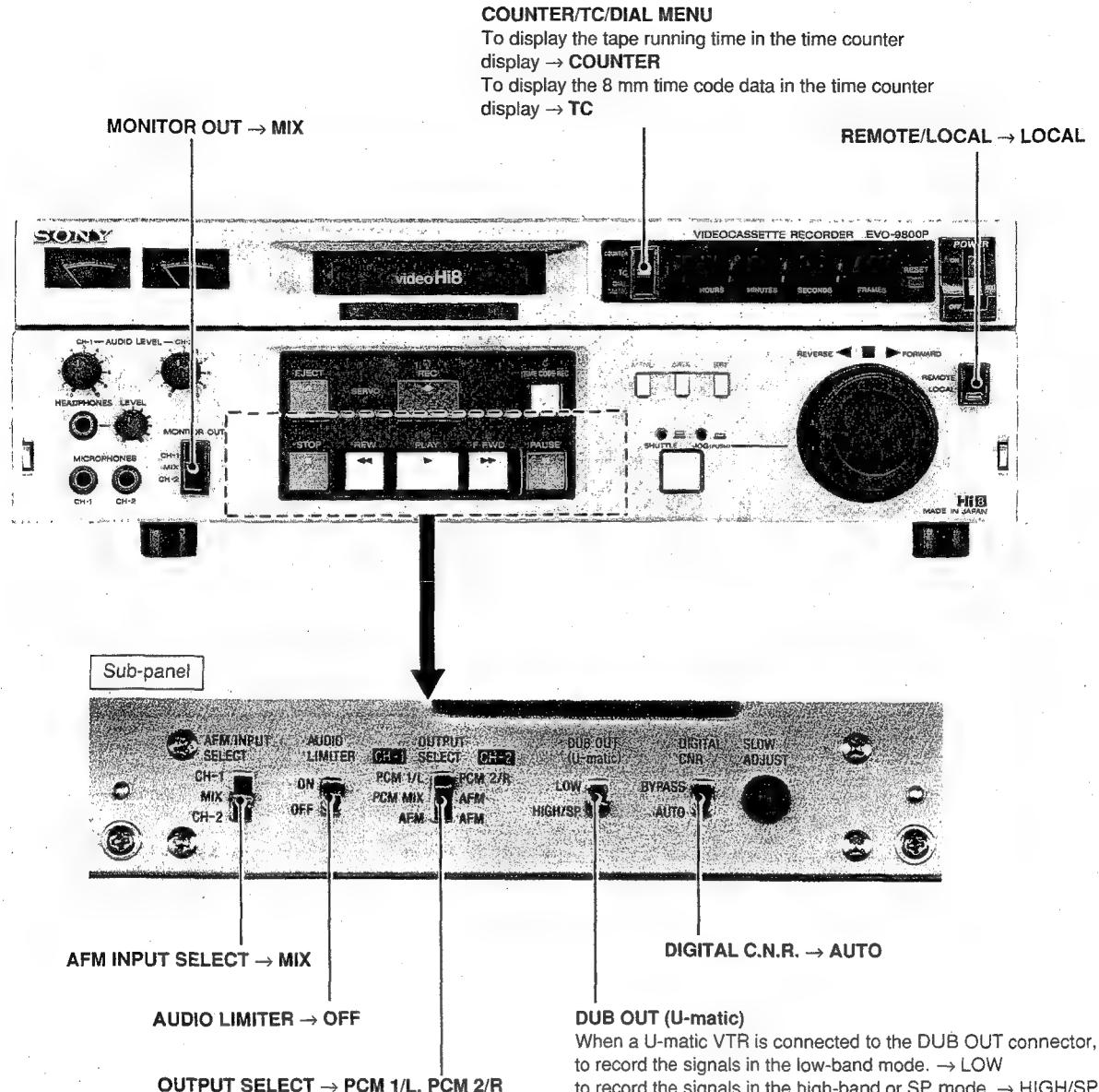


Note

When the microphones are connected, the signals connected to the AUDIO LINE IN connectors on the rear panel are automatically cut off, and signals from the microphones will be recorded.

Preparation

After connecting the equipment to be used, set the switches as shown below.

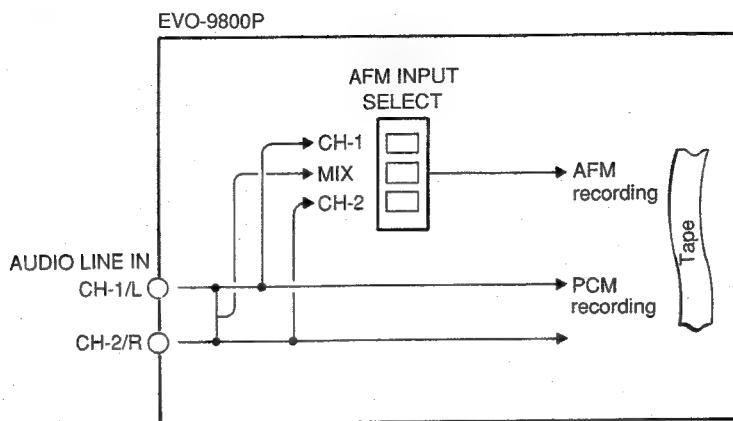


Preparation (continued)

To select the sound to be recorded

The sound is recorded by AFM in monaural, and by PCM in stereo simultaneously. In PCM recording, the sound connected to the AUDIO LINE IN CH-1/L connector is recorded on the PCM channel 1, and that connected to the CH-2/R connector on the PCM channel 2.

The sound recorded by AFM is monaural so that the recorded sound should be selected from the input signals, CH-1/L, CH-2/R or both, by the AFM INPUT SELECT switch on the sub-panel. Setting of the switch and the selected sound are as shown below.

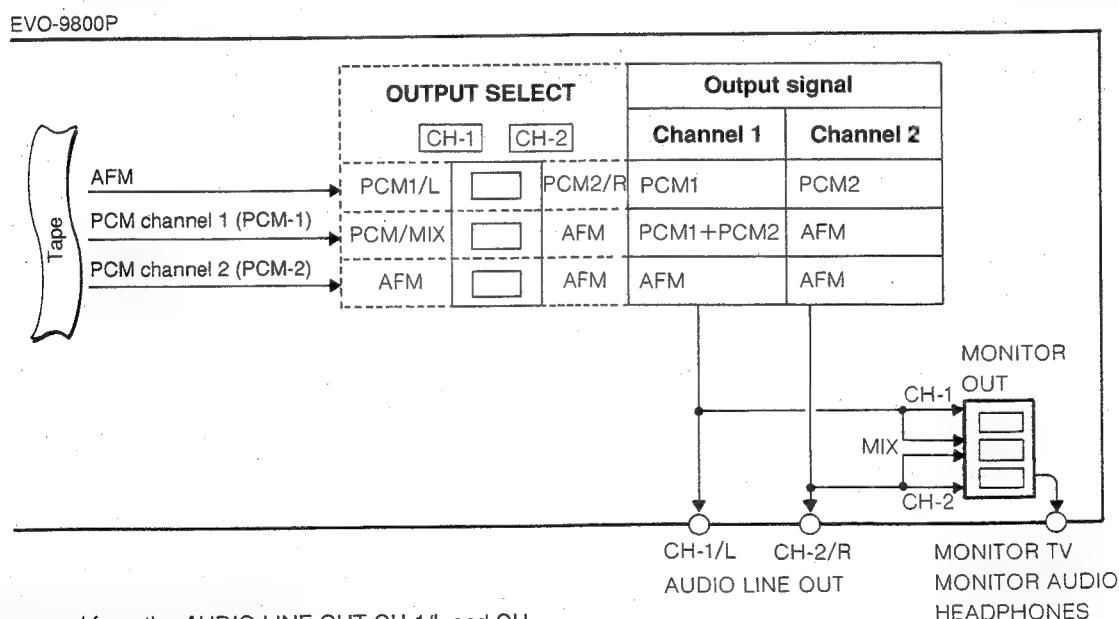


To select the output and monitored sound

The sounds output from the AUDIO LINE OUT CH-1/L and CH-2/R connectors are selected from the monaural AFM sound and 2-channel PCM sound by the OUTPUT SELECT switch on the sub-panel.

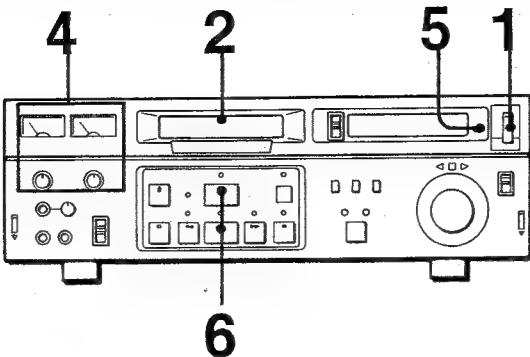
The sound can be monitored during recording or playback.

The monitored sound through stereo headphones, audio equipment connected to the MONITOR AUDIO connector, or a video monitor connected to the MONITOR TV connector, is selected by the MONITOR OUT switch. The OUTPUT SELECT switch and MONITOR OUT switch select the output and monitored sound as shown below.



- The sound from the AUDIO LINE OUT CH-1/L and CH-2/R connectors are not affected by the setting of the MONITOR OUT switch.
- The sound volume of the headphones can be adjusted by the HEADPHONES LEVEL control.

Recording



- 1** Turn the power of the EVO-9800P and the connected equipment on.
- 2** Insert a cassette.
- 3** Prepare the program to be recorded.
To record the playback signal from the other VTR: Set the VTR used for playback in playback mode.
To record the signal from the video camera:
Adjust the camera.
The picture in E-to-E mode appears on the monitor screen.
- 4** Adjust the audio recording level.
Turn the AUDIO LEVEL controls so that the meter pointers swing to "0" at their maximum deflection.
 - The CH-1 control adjusts the level of the audio channel 1 (left), and the CH-2 control adjusts the level of the audio channel 2 (right).
 - When recording a program which contains sharp peaks such as the signal picked up by a microphone, set the AUDIO LIMITER switch on the sub-panel to ON.

- 5** Press the RESET button when the COUNTER/TC/DIAL MENU selector is set to COUNTER.
The value on the time counter display becomes "0:00:00:00".
- 6** Press the REC ● and PLAY ▶ buttons simultaneously.
Recording will begin.

When the recording is finished

Press the STOP ■ button.

If the recording is done to the end of the tape
The tape automatically rewinds to the beginning, and stops.

Regarding a cassette

Be sure to check that the tab on the rear of the cassette is at the original position and the tab window is not red before inserting it in the VTR. Or the recording mode cannot be obtained.

To stop the tape momentarily

Press the PAUSE ■ button.

To resume recording, press the PAUSE ■ button again.

Tape protection mode

If the pause mode continues for about 7 minutes, the tape comes away from the video heads and the still picture disappears. This protects the video heads and the tape. It is called "long pause mode."

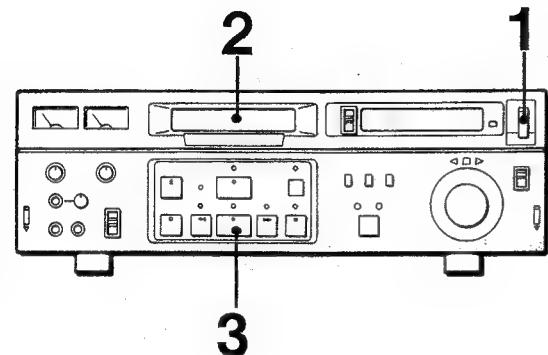
E-to-E (Electric-to-Electric) mode

An input video signal which has passed through the amplifier in the recorder is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.

The unit automatically enters the E-to-E mode when it is set in the stop, F FWD or REW mode.

Playback

Operation



1 Turn the power of the EVO-9800P and the connected equipment on.

2 Insert the cassette to be played back.

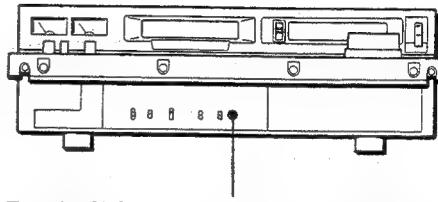
3 Press the PLAY ▶ button.
Playback will begin.

To stop playback

Press the STOP ■ button.

When the tape is played back to the end
It automatically rewinds to the beginning and then stops.

If snow or streaks appear on the slow-motion playback picture



Turn the SLOW ADJUST control clockwise or counterclockwise until the best possible picture is obtained.

- When the playback of this particular tape is finished, be sure to return the SLOW ADJUST control to the center click position.

To stop the tape momentarily

Press the PAUSE ■ button. The tape stops and a still picture appears on the monitor screen. The still picture is a clear one having no guardband noise.

To resume playback, press the PAUSE ■ button again or press the PLAY ▶ button.

If the pause mode continues for about 7 minutes, the recorder automatically enters the long pause mode, in which the still picture is not shown. Press the PAUSE ■ button to release the long pause mode and to see the still picture.

If life-like color reproduction cannot be obtained in a picture moving at high speed

When a picture moving at high-speed such as running cars in a car race is played back, life-like color reproduction may not be obtained. In such a case, change the digital chroma noise reduction level by the dial menu operation (menu number 226).

The control level of the digital chroma noise reducer can be changed by the dial menu. See "Dial Menu Operation" for details.

Search Operation

A desired portion can be quickly located with the search dial. There are two modes of search operation, shuttle mode and jog mode. Every time the search dial is pressed, shuttle mode and jog mode are changed alternately, and a corresponding lamp, SHUTTLE or JOG, lights.

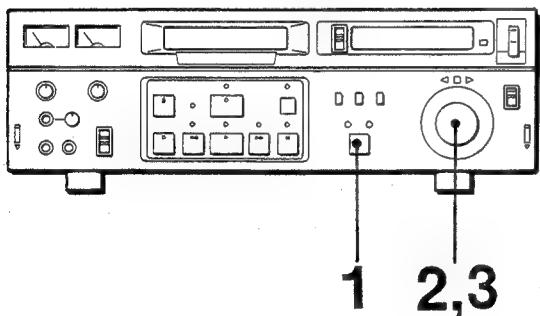
Shuttle mode

In the shuttle mode, the tape playback speed depends on the position of the dial. The tape runs at a speed from 1/30 to 15 times normal speed in forward direction, and from 1/30 to 13 times normal speed in reverse direction. When the dial is turned fully clockwise or counterclockwise direction, the speed of 15 or 13 times normal speed is obtained respectively. Use this mode to search for a desired position approximately.

Jog mode

In the jog mode, the tape playback speed depends on the rotating speed of the search dial. The tape runs at a speed from 0 to 1 time normal speed. Use this mode to search for a desired position precisely.

Operation



- 1 Press the search button to enter the search mode. The SHUTTLE or JOG lamp lights.
 - To change the shuttle or jog mode, press the search dial.

- 2 Turn the search dial.

When the dial is turned clockwise, the tape runs in the forward direction, and the ▶ FORWARD lamp lights.
When the dial is turned counterclockwise, the tape runs in the reverse direction, and the REVERSE ◀ lamp lights.

- 3 Return the dial to the center position at the desired point in shuttle mode, or stop the dial rotation in jog mode.

The tape stops momentarily, the ■ lamp lights, and a still picture is obtained.

To terminate the search mode

Press one of the PLAY ▶, REW ◀◀, F FWD ▶▶, or STOP ■ button.

Note

Guard band noise appears on the playback picture with a speed other than the normal speed because the servo system is not locked during search operation.

Tape protection mode

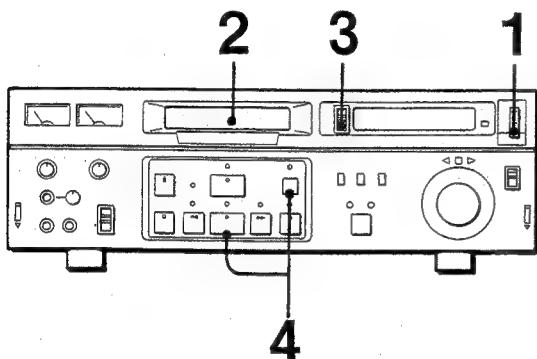
If the pause mode continues for about 7 minutes in search mode, the tape runs forward one frame. If the pause mode continues, this will occur every 7 minutes.

Recording and Playback of the 8mm Time Code

When the video and audio signals are recorded using this machine, the 8mm time code is recorded simultaneously. The data of the time code can be set by the dial menu operation. (See "Dial Menu Operation".)

When the COUNTER/TC/DIAL MENU selector is set to the TC position, the 8mm time code data is displayed on the time counter display. The time code can be recorded on the tape on which video and audio signals have been recorded.

Recording the 8mm Time Code after Audio and Video Signals Having Been Recorded



1 Turn the power of the EVO-9800P on.

2 Insert a cassette on which the 8 mm time code is to be recorded.

3 Set the COUNTER/TC/ DIAL MENU selector to TC.

4 Press the TIME CODE REC and PLAY ▶ buttons simultaneously.

Time code recording will begin.

Note

While the 8 mm time code is recorded, lower part of the playback picture is blanked by a black bar, and the AFM sound is muted. At this time, the quality of the PCM sound becomes degraded compared with that in normal playback, but this is not a malfunction.

To stop time code recording

Press the STOP ■ button.

Playback of the 8 mm Time Code

Set the COUNTER/TC/DIAL MENU selector to TC, and the 8 mm time code data recorded on the tape is displayed on the time counter display when the tape is played back.

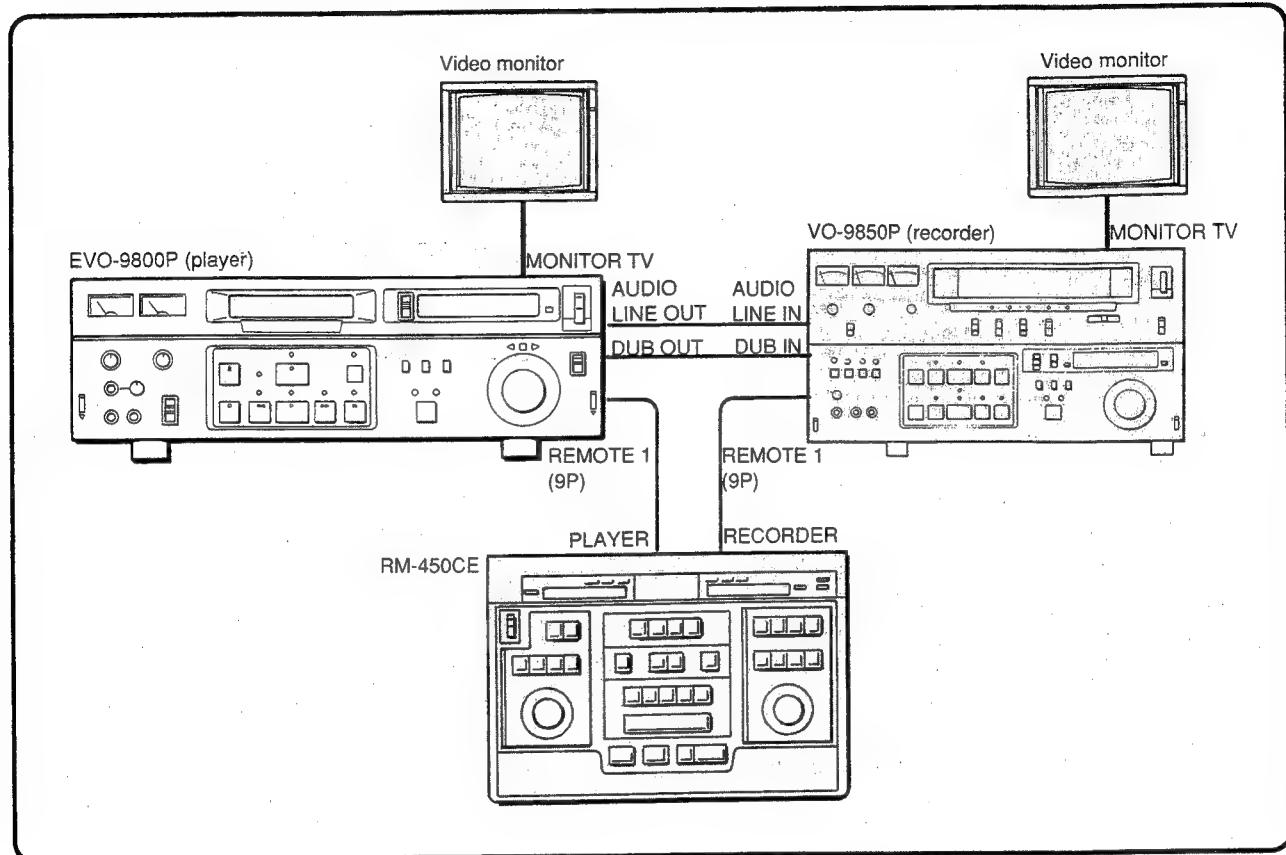
Note

For editing using time code, consecutive time codes should be recorded on a tape.

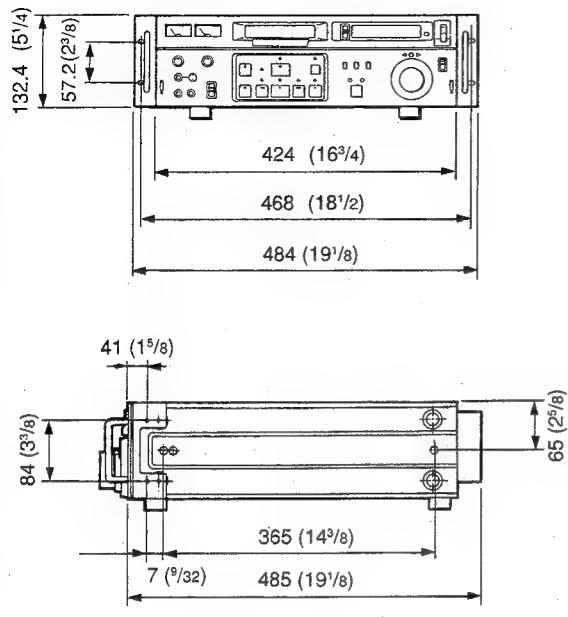
Editing

The EVO-9800P can be used as a player of an automatic editing system composed of the editing control unit, U-matic VTR for recording, video monitors, etc. Then the program recorded by a video camcorder can be edited.

An example of an editing system is introduced here. For details on connections and operations, refer to the instruction manual supplied to the editing control unit or VTR.



Rack Mounting



The EVO-9800P can be mounted into a standard 19-inch rack. When your unit is to be mounted in a rack, consult your Sony dealer.

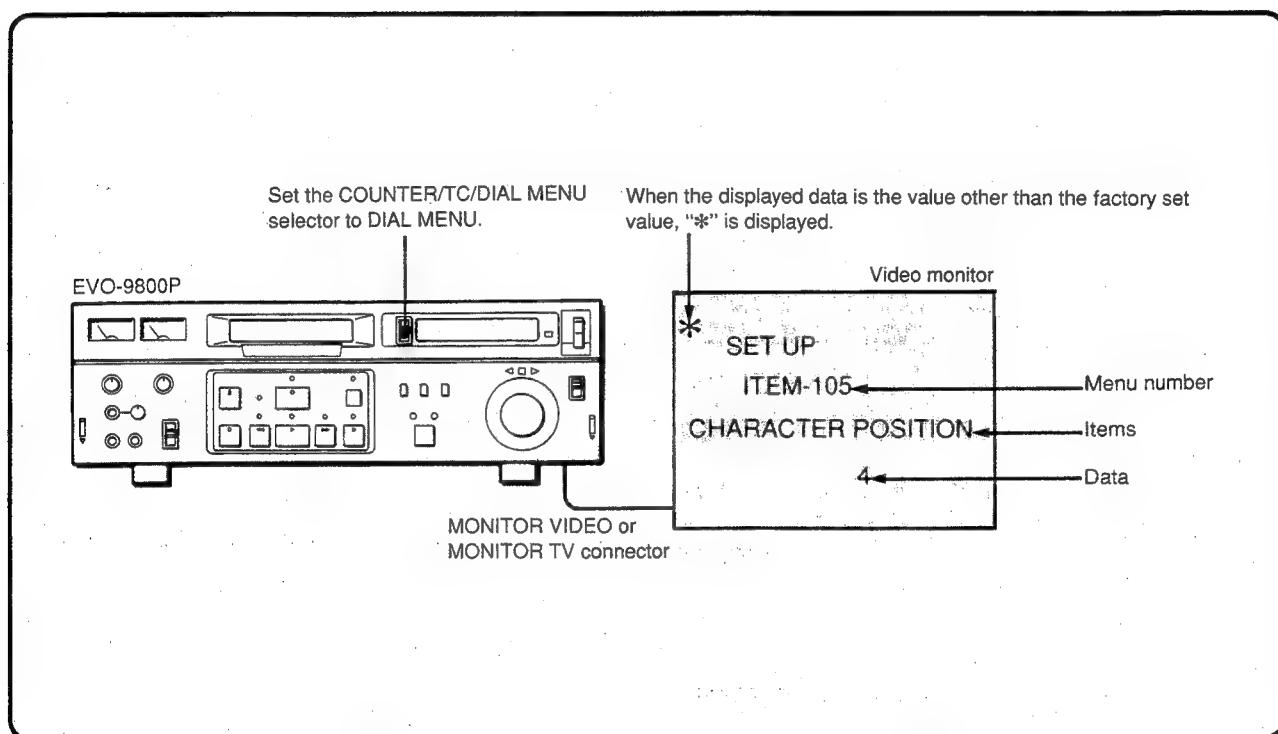
Dial Menu Operation

Use the search dial to set the data for tape transportation, or to change the position for displaying characters on a video monitor.

The items and the contents are superimposed on the video signal supplied from the MONITOR VIDEO or MONITOR TV connector, and are displayed on the video monitor screen connected there when the COUNTER/TC/DIAL MENU selector is set to DIAL MENU. During dial menu operation, menu number and data are displayed on the time counter display on the front panel.

Note

To superimpose a menu on a video monitor screen, input a video signal to the unit and set the unit in the stop (E-to-E) mode.



Note

When the data of the dial menu is superimposed on a video monitor in a still mode and the guard band noise comes at a vertical sync signal, characters may disappear from the monitor screen. This is not a malfunction.

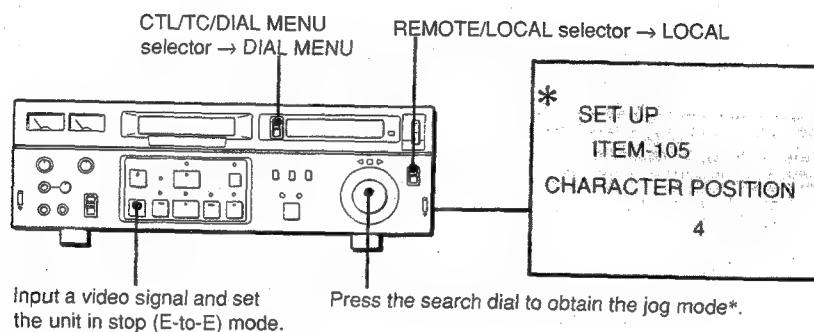
Operation

Selects a menu and sets the data while monitoring the video monitor screen or the time counter display.

Preparation

Prepare as illustrated before dial menu operation.

Dial menu operation mode is obtained, and the **<**, **■**, and **▶** lamps light, and the time counter display starts blinking. One of the menu number 101 through 200 is displayed on the monitor screen. On the time counter display, the data of the item displayed on the video monitor is shown.

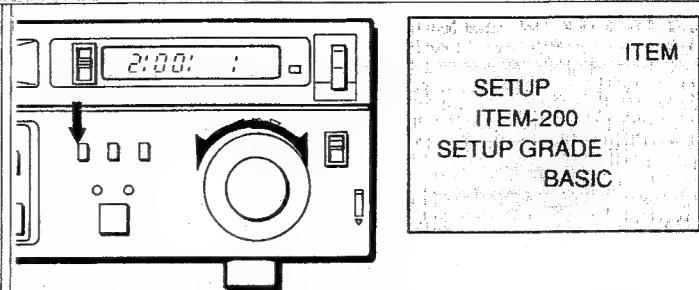


* The SHUTTLE and JOG lamps do not light in the dial menu operation mode. If the search dial turns freely, you are operating in the jog mode. If the dial has clicks, you are operating in the shuttle mode.

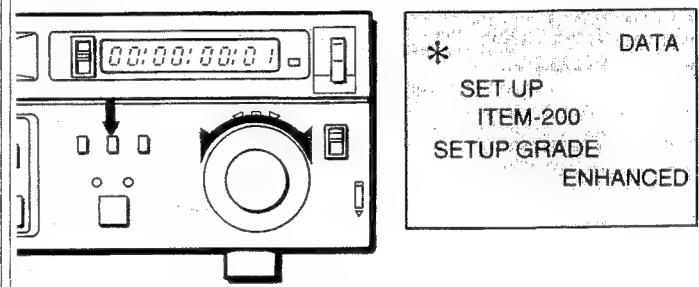
- The set data can be kept even if the power is turned off.
- When the menu number 200 is set to "ENHANCED", one of the all items of menu number 101 to 227 is displayed when the unit enters the dial menu operation mode.

Operation

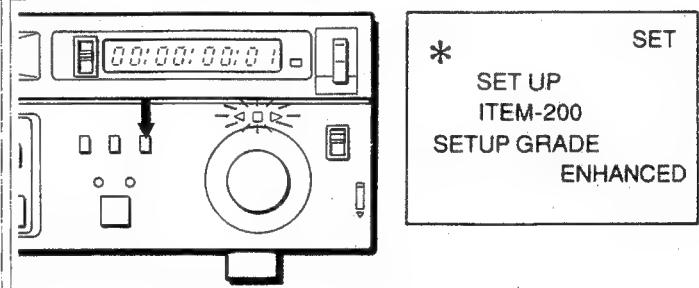
- 1** To select a menu, turn the search dial while pressing the MENU button.



- 2** To select a data, turn the search dial while pressing the DATA button.
To select the position of setting to set the time code, turn the search dial without pressing the DATA button.



- 3** To set the data, press the SET button.
The \blacktriangleleft , \blacksquare , and \triangleright lamps blink for a second, and the displayed data is stored in memory. Then the blinking of the lamps stops.



To terminate the dial menu operation

Set the COUNTER/TC/ DIAL MENU selector to TC or COUNTER. The displayed data disappears, and the ordinary operation will be possible.

Dial Menu Operation (continued)

Contents

There are two types of menus; basic and enhanced.
Normally, use only the basic functions.

Basic functions <input type="checkbox"/> indicates the factory set data.			
Menu No.	Items	Data	Contents
		On time counter display	On monitor screen
101	TIME CODE PRESET	<input type="checkbox"/> 00000000 23595924	TCG 00:00:00:00 TCG 23:59:59:24
105	CHARACTER POSITION	<input type="checkbox"/> 00 /01/02~15	<input type="checkbox"/> OFF /1/2/~15
106	CHARACTER SIZE	<input type="checkbox"/> 0 /1	<input type="checkbox"/> SMALL /LARGE
200	SETUP GRADE	<input type="checkbox"/> 0 /1	<input type="checkbox"/> BASIC /ENHANCED

Note

Normally, select BASIC. To use the enhanced functions, select ENHANCED.

Enhanced functions

indicates the factory set data.

The enhanced functions can be set when the menu number 200 of the basic function is set to "ENHANCED".

Menu No.	Contents	Data		Contents
		On time counter display	On monitor screen	
201	ERROR STATUS	----- ERROR-02 ERROR-10 ERROR-20 ERROR-21 ERROR-22 ERROR-23 ERROR-90 ERROR-99	NONE TAPE SLACK HUMID SYSTEM ERROR no display SYSTEM ERROR 50 SYSTEM ERROR 60 no display no display	<p>Self diagnostic function. When an error occurs during operation, an error code is displayed on the time counter display. In this case, select this menu, and the error name corresponding to the error will be displayed on the monitor screen.</p> <ul style="list-style-type: none"> • When "ERROR-02" is displayed, refer to page 34. • When "ERROR-10" is displayed, refer to "Moisture condensation" on page 35. • When errors of the error number 20 and after occur, please consult your Sony service facility.
205	HOURS METER (DRUM)	<input type="text" value="00000"/> 15000	<input type="text" value="00000H"/> 15000H	<p>Displays the accumulated time of the rotation of the upper head drum. The data from 0 to 15,000 hours can be displayed. Use the data for the reference of head replacement.</p>
206	HOUR METER	<input type="text" value="00000"/> 15000	<input type="text" value="00000H"/> 15000H	<p>Displays the accumulated power-on time. The data from 0 to 15,000 hours can be displayed.</p>
207	STILL TIMER	<input type="text" value="00/01/~"/> <input type="text" value="15"/>	<input type="text" value="0.5/1/~"/> <input type="text" value="7"/>	<p>Sets the time to enter the tape protection mode. To prevent the video head from clogging or to reduce the tape damage, the unit automatically enters the tape protection mode after the fixed time has passed in stop or still mode. This item sets the transition time from pause or still mode to the tape protection mode. The time can be set between 0.5 second and 7 minutes.</p>
209	SELECTION FOR SEARCH DIAL ENABLE	0/ <input type="text" value="1"/>	<input type="checkbox"/> DIRECT/ <input type="checkbox"/> VIA SEARCH BUTTON	<p>Selects the search dial function.</p> <p>DIRECT: When the search dial is turned in a mode other than recording, the unit enters the search mode.</p> <p>VIA SEARCH BUTTON: When the search button is pressed, the unit enters the search mode.</p>
214	PREROLL TIME	<input type="text" value="00/01/~"/> <input type="text" value="05"/>	<input type="text" value="~15"/> <input type="text" value="0/1/~"/> <input type="text" value="5"/>	<p>Sets the preroll time. The time can be set from 0 to 15 seconds.</p>

Dial Menu Operation (continued)

218	PINCH ON DELAY	00/01/02/ [03] ~/ 15	0/1/2/ [3] ~/15	Sets the time required to start tape transportation after the PLAY command is sent.
224	TAPE PROTECTION	0/ 1	STEP FWD / LONG PAUSE	Selects the tape protection mode. After the time set in menu 207 has passed, the unit enters the operation selected in this menu. STEP FWD: The tape starts running in the forward direction at a speed of 1/30 time normal speed. LONG PAUSE: The unit enters the long pause mode and the tape around the head drum automatically slackens.
226	DIGITAL CNR LEVEL	0/1/ [2]	OFF/1/ [2]	Selects digital chroma noise reduction level. OFF: Chroma noise reducer is turned off. 1: Chroma noise reduction level is low. 2: Chroma noise reduction level is high.
227	TIME CODE SLAVE MODE	0/ [1]	OFF/ [ON]	Selects the slave mode of 8mm time code. ON: When time code is to be recorded from where the time code has already been recorded, the time code consecutive to the recorded time code will be recorded. When time code is to be recorded where no time code has been recorded, the time code from "00:00:00:00" will be recorded. OFF: Time code will be recorded from the value set by the dial menu 101.

Specifications

System	
Recording system	Rotary 2-head helical scan Luminance: FM recording Color signal: converted subcarrier direct recording
Video signal system	CCIR standards, PAL color
Audio recording system	Normal recording AFM: Rotary head, FM system (monaural) PCM: PCM format (two channels)
Video	
Inputs	VIDEO IN (BNC type) × 1 1.0 Vp-p±0.3 Vp-p, 75 ohms, unbalanced, sync negative S-VIDEO IN (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced
Outputs	VIDEO OUT (BNC type) × 1 1.0 Vp-p±0.2 Vp-p, 75 ohms, unbalanced, sync negative DUB OUT (7-pin) × 1 MONITOR TV (8-pin) × 1 MONITOR VIDEO (BNC type) × 1 S-VIDEO OUT (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced
Horizontal resolution	Hi8 mode recording: 400 lines (both B/W and color) (S-VIDEO signals)
S/N	Hi8 mode 45 dB (with ME tape) Conventional format 45 dB (color)
Sync signal input	SYNC IN (BNC type) × 1 2.5 Vp-p (1 to 5 Vp-p), 75 ohms, unbalanced
Recording level control	Automatic
Audio	
Input	AUDIO LINE IN CH-1/L, CH-2/R (XLR 3-pin female) × 1 each +4 dB, 10 k ohms, balanced MICROPHONES CH-1/L, CH-2/R (phone jack) × 1 each -60 dB, 3 k ohms, unbalanced
Outputs	AUDIO LINE OUT CH-1/L, CH-2/R (XLR 3-pin male) × 1 each +4 dBm (at 600 ohm load), balanced MONITOR AUDIO (phono jack) × 1 -5 dB (at 47 k ohm load) MONITOR TV (8 pin) × 1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from -26 to -46 dB)
Frequency response	AFM: 30 to 15,000 Hz PCM: 20 to 15000 Hz (both audio channel 1 and 2)
Dynamic range	PCM: more than 80 dB
Recording level control	Manual or limiter selectable
PCM sampling frequency	31.5 kHz

Other functions	
Pause	A still picture is obtained with long pause function
Search	Still, 1/30 to 15 times normal speed in forward direction, 1/30 to 13 times normal speed in reverse direction
Sync system	Automatic switching between internal and external
Dropout compensator	Built-in

Tape transport	
Tape speed	20.05 mm/sec.
Recording and playback time	Approx. 90 minutes (in SP mode)
Fast forward and rewind time	Within 3 minutes (with E5-90/P5-90)
Tape compatibility	8 mm video cassette tapes
Usable tapes	E5-HME, P5-MP series and equivalent

General	
Power requirements	Rated voltage: 220 to 240 V AC, 50/60 Hz Operating voltage: 198 to 264 V AC, 48 to 64 Hz
Power consumption	55 W
Operating position	Horizontal (up to 20 degrees)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 146.5 × 452 mm (w/h/d) (16 3/4 × 5 7/8 × 17 7/8 inches) not including projecting parts and controls
Weight	Approx. 14 kg (30 lb 14 oz)
Supplied accessories	AC power cord (1) Operating instructions (1)

Design and specifications are subject to change without notice.

Recommended video equipment and accessories	
Editing Control Unit	RM-450CE, RM-440 (when the BKU-703A installed)
Color Video Monitor	Sony CVM and PVM series
Color Video Camera	Sony DXC series
33P Editing Interface	BKU-703A
Remote Control Unit	RM-500, RM-580 (when the BKU-703A installed)
Cleaning Cassette	V8-25CLH
Remote Control Cable	RCC-5G (9-pin), RCC-5F (33-pin)
Dubbing Cable	VDC-5A (5 m)
Monitor Connecting Cable	VMC-3P (3 m), VMC-5P (5 m), VMC-10P (10 m)
Multi Remote Control Unit	RM-555 (when the BKU-703A installed)
Video and Audio Switcher	BVS-500
VTR Selector	RM-V5
Rack Mount Kit	RMM-980
S-VIDEO connecting cable	YC-30V (3 m)

Troubleshooting

Should you have a problem on your recorder, first check the three items in Check 1 and then the appropriate item in Check 2 or Check 3.

CHECK 1

- 1** Check that the AC power cord is firmly connected.
- 2** Check that the POWER switch is set to ON.
- 3** Check the connections. (See pages 17 to 18.)

CHECK 2

Symptoms	Possible causes and corrective actions
AUTO OFF indicator lights and function buttons do not function. "ERROR-10" is displayed on the time counter display.	Moisture has condensed inside the unit. Keep the power on and wait until the lamp goes off indicating that the moisture has evaporated (see page 35).
The tape suddenly stops and function buttons do not function. "ERROR-02" is displayed on the time counter display.	Eject the cassette and take up the leader tape manually. Reinsert the cassette and press function buttons again. If the recorder does not function, turn off the recorder and contact your nearest Sony service facility.
The STANDBY indicator remains lit and the recorder does not operate even though the lamp of the function button pressed is lit. "ERROR-02" is displayed on the time counter display.	
The cassette cannot be ejected.	Turn off the recorder and contact your nearest Sony service facility.

CHECK 3

Symptoms	Corrective actions
A cassette cannot be inserted.	<ul style="list-style-type: none">• Insert the cassette with the window up.• Check whether another cassette has already been inserted.• Check whether the AUTO OFF lamp is lit.
The tape doesn't run when any of the function buttons is pressed.	<ul style="list-style-type: none">• Check that the REMOTE/LOCAL switch is not set at REMOTE.• Check whether the STANDBY indicator is lit. When so, once turn off the power.
Recording cannot be done.	<ul style="list-style-type: none">• Check that the REC lamp is lit.• Check that the tab on the rear of the cassette is placed in original position.• Adjust the audio recording level.• Prepare the program to be recorded.
Snow or streaks appear on the playback picture.	<ul style="list-style-type: none">• Clean the video head.
Sound is not heard.	<ul style="list-style-type: none">• Check the OUTPUT SELECT and the MONITOR OUT switch setting.

Moisture condensation

When the unit is moved directly from a cold place to a warm place, or when the unit is operated in a place with high humidity, moisture may condense inside the unit. If the tape runs in this condition, it may adhere to the head drum or the tape guide and be damaged. To prevent this possibility, the unit is equipped with a moisture detector. The AUTO OFF indicator lights and the time counter display indicates "ERROR-10" to indicate that moisture

has been detected inside the unit. When this lamp is lit, the cassette is automatically ejected, if it is inserted, and the unit does not function, even if any of the function buttons is pressed.

- When the unit is first moved to place in which it is subjected to condensation, we recommend you to wait for about ten minutes and to turn the power on so that the moisture detector will operate.

Video head cleaning

If the picture temporarily disappears or if snow or noise show up in the picture, the video head is contaminated and should be cleaned. Use the optional V8-25CLH cleaning cassette and perform cleaning as follows.

1 Insert the cleaning cassette.

2 Press the PLAY ▶ button.

3 Let the cleaning cassette run for about 15 seconds and then press the STOP ■ button.

4 Press the EJECT ▲ button to remove the cleaning cassette.

- Do not run a cleaning cassette for more than 15 seconds at a time; nor use it unless the picture symptoms clearly indicate the need for head cleaning. Excessive use of the cleaning cassette will shorten the life of the heads.

- Do not rewind the cleaning cassette every time it is used. When the tape is used to its end, then rewind it.
- You can run through a cleaning cassette several times, although it does gradually become less effective.

Video head replacement

If picture quality is still deficient after cleaning, the video heads may need to be replaced. The life of the heads is approximately 500-1000 hours of use. With this unit, the accumulated operation time of the heads can be checked with dial menu 205 HOUR METER (DRUM).

Note

Regarding head replacement, please consult your Sony service facility.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.

Afin d'écartier tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

Attention

Des programmes de télévision, films, bandes vidéo et autres peuvent être protégés par des droits d'auteur. L'enregistrement non autorisé de tels matériaux risque de constituer une violation de ces droits d'auteur.

Remarque

Cet appareil est conforme à la directive 87/308/EEC de la CEE en ce qui concerne la suppression des interférences.